REMARKS

Applicants amend claim 8. Claims 2, 4, and 8-11 are pending in this application.

Applicants amend claim 8 to more appropriately define the claimed subject matter. These amendments do not add any new subject matter.

103(a) Rejection of Claims 2, 4, and 8-11 over *Ooishi* in view of *Branch et al.*

The Examiner rejected claims 2, 4, and 8-11 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,271,710 to Ooishi ("*Ooishi*") in view of U.S. Patent Application Publication No. 2003/0076179 to Branch et al. ("*Branch et al.*"). Applicants respectfully traverse the rejection for the following reasons.

Claims 2, 4, and 8-11 are allowable over *Ooishi* in view of *Branch et al.* for at least the reason that *Ooishi* and *Branch et al.* fail to disclose each and every element recited in independent claim 8, from which claims 2, 4, and 9-11 depend. For example, *Ooishi* and *Branch et al.* fail to disclose a "**circuit for providing a refresh cycle for a memory device**" comprising, inter alia, a "**frequency generator comprising (i) a comparator to compare two input signals and generate an output signal that indicates which of the two input signals is larger and (ii) a capacitor**," as recited in claim 8.

Ooishi fails to teach or suggest the "frequency generator" recited in claim 8. The Examiner relies upon the "ring oscillator 30" (shown in Figure 3) of *Ooishi* to constitute a "frequency generator." The Examiner contends that "figure 4 shows all limitations of the claim except for the detail of the ring oscillator 30. However, Branch et al.'s figure 3a shows a ring oscillator having low Jitter. Therefore, it would have been obvious to one

having ordinary skill in the art to [use] Branch et al.'s ring oscillator for Ooshi's oscillator 30 for the purpose of saving power consumption. Thus, the modified Ooshi's figure 4 shows that the frequency generator comprises a comparator and a capacitor." (Office Action of 12/01/05, pg. 2, paragraph 4.)

However, not only does *Ooishi* fail to teach the frequency generator, but *Branch et al.* also does not make up for the deficiencies of *Ooishi* for at least the reason that *Branch et al.* also fails to teach or suggest a "**frequency generator comprising (i) a comparator to compare two input signals and generate an output signal that indicates which of the two input signals is larger and (ii) a capacitor**," as recited in amended claim 8. The "ring oscillator" of *Branch et al.* relied upon by the Examiner does not comprise a "comparator to compare two input signals and generate an output signal that indicates which of the two input signals is larger," as required by claim 8. Instead, Figure 3A of *Branch et al.* illustrates a ring oscillator that has three "differential inverting stages," one of the differential inverting stages being labeled as D7 (Figure 3a; pg. 2, paragraphs [0026] and [0028].) A differential inverting stage does not constitute a comparator. A comparator is a device that "compare[s] two input signals and generate[s] an output signal that indicates which of the two input signals is larger," as required by claim 8. In contrast, a differential inverting stage is a "NOT" logic gate that inverts a digital signal at its differential inputs.

In response to Applicants' arguments in the Request for Reconsideration of March 1, 2006, the Examiner has stated that "Brach et al.'s [*sic*] figure 3B shows a frequency generator comprising a comparator D7 and capacitor C3" (Advisory Action of 3/13/06, Continuation Sheet). However, *Branch et al.* does not disclose that the

differential inverting stage D7 compares two input signals or generates an output signal that indicates which of the two input signals is larger, as required by claim 8. The differential inverting stage D7 of *Branch et al.* also does not inherently "compare two input signals and generate an output signal that indicates which of the two input signals is larger," because the differential inverting stage D7 is an inverter that simply inverts an inputted digital signal. Thus, the circuit in Figure 4 of *Ooishi*, as modified by the "ring oscillator" of *Branch et al.*, does not comprise a "frequency generator comprising (i) a comparator to compare two input signals and generate an output signal that indicates which of the two input signals is larger and (ii) a capacitor," as recited in claim 8.

Thus, since *Ooishi* and *Branch et al.* fail to teach or suggest each and every element of claim 8, claim 8 and claims 2, 4, and 9-11 that depend therefrom are allowable over *Ooishi* in view of *Branch et al.* under 35 U.S.C. § 103(a).

CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 06-0916.

Respectfully submitted,

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Dated: April 3, 2006

By: _____
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